Digital Signatures at LaDOTD

2009 IHEEP Conference
San Antonio, Texas
September 28, 2009
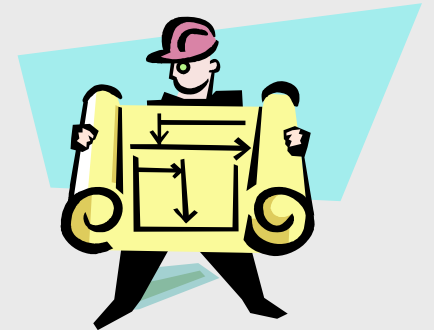
Presented by Hollis Ward
DOTD Design Automation Manager

Digital Signature Technology
(Finding the Right Solution)

Louisiana Professional Engineering and Land Surveying Board (LAPELS) - Digital Signature Rules -

❖ Chapter 1, 105 Definitions; page 3:

Signature – handwritten or digital as follows:

b. a digital signature which is an electronic authentication process attached to or logically associated with an electronic document. The digital signature must be:

i. unique to the person using it

ii. capable of verification

iii. under the sole control of the person using it

iv. linked to a document in such a manner that the digital signature is invalidated if any data in the document is changed

Silanis ApproveIt Signature Verification

❖ "ePersona" Signature Information

➢ Public information includes a secured image of the person's handwritten signature, user profile info., digital certificate and a unique public key.

➢ Private portion contains information that is only known or available to the signer, such as a unique, private password and private key.

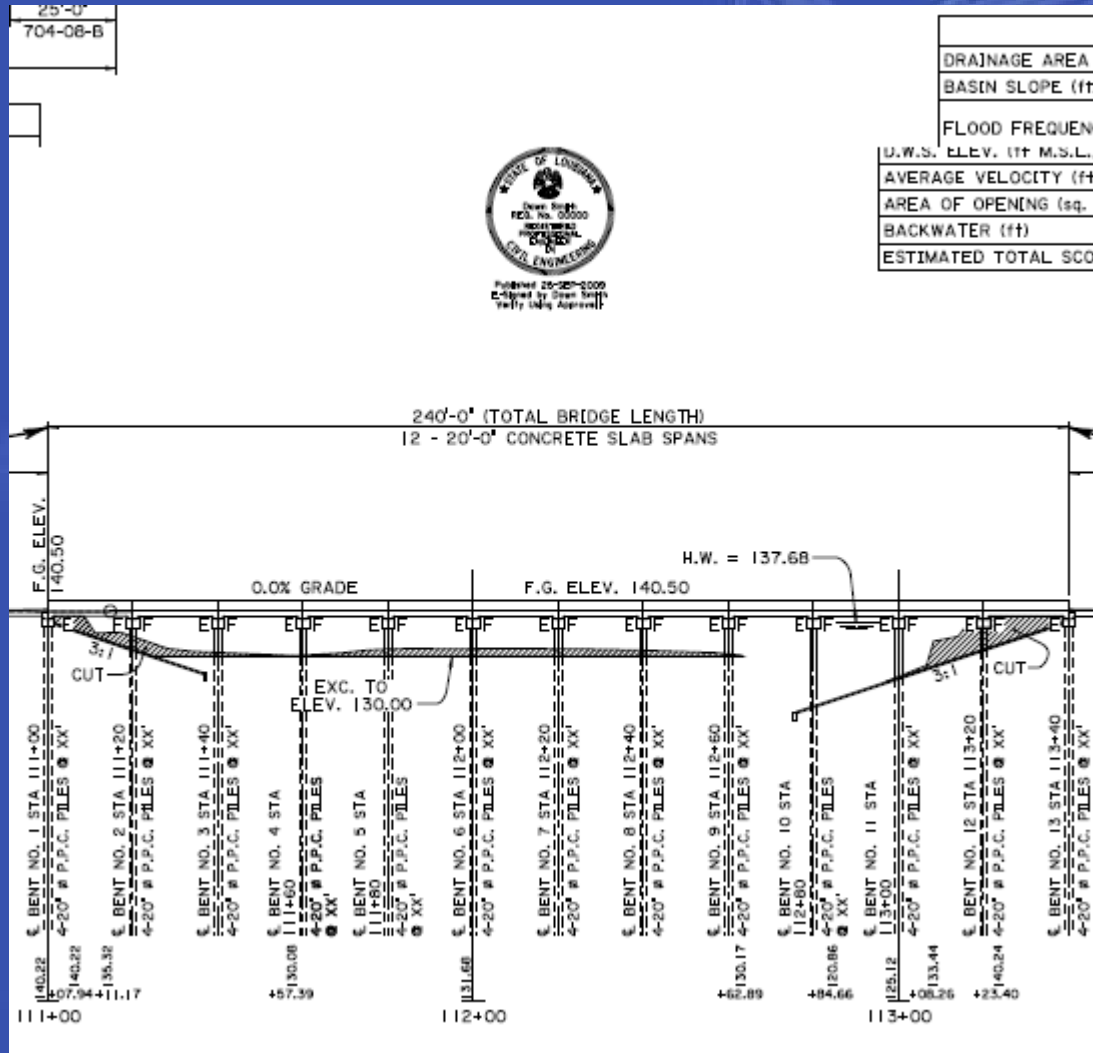# ApproveIt Signature Verification

❖ ePersona Signature Versatility

➢ Location of ePersona file is controlled by signer. (Desktop, Laptop, Flash Drive, etc.).

➢ The ePersona can only be accessed upon entering the private password

➢ Can use a "Trusted Person" ePersona in lieu of other Certificate Authority

ApproveIt Signature Verification

❖ "Trusted Person" as Signature Authority

➢ Performs a same basic function as VeriSign, etc.

➢ Collects and maintains identification information for individual ePersona holders on a signed request form that includes personal information such as employment verification, images of photo ID and signature image.

➢ Acts as the certifying authority for the DOTD's ePersona signatures. An individual's ePersona signature is invalid unless accompanied by the Trusted Person's ePersona.

Silanis ApproveIt Digital Signatures

Start with CAD Drawing with CAD Seal

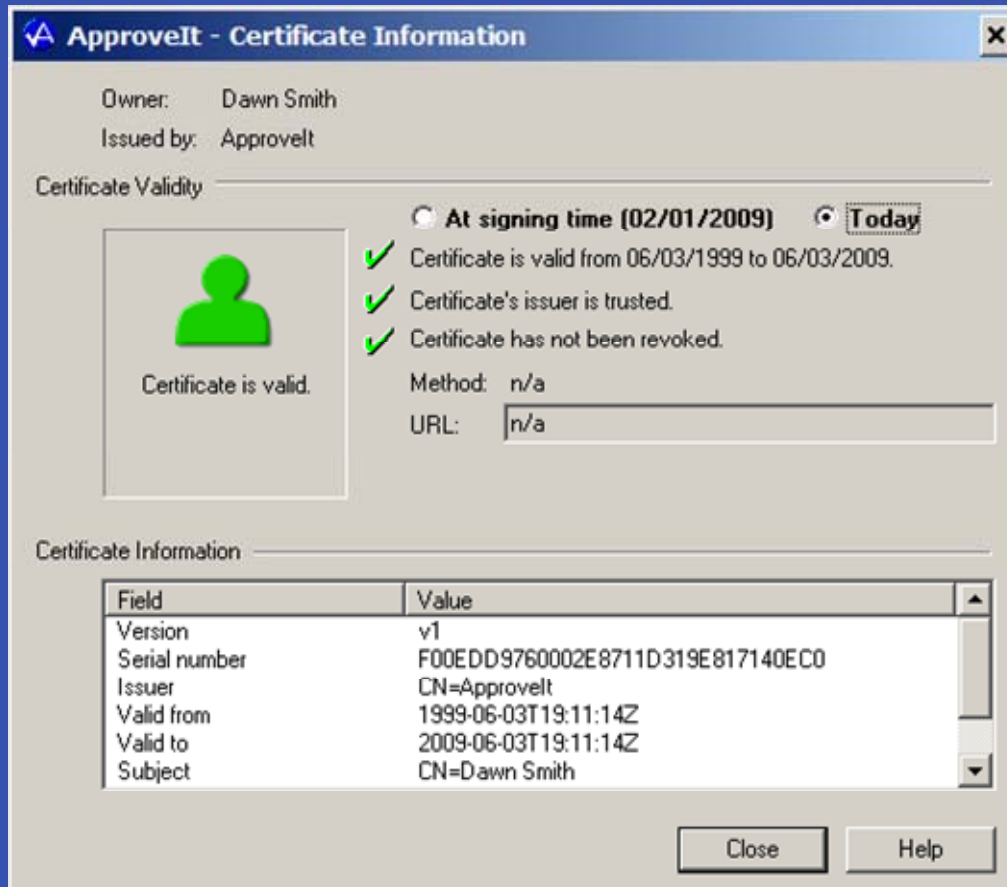# Silanis ApproveIt Digital Signature

Dawn Smith's Seal and Digital Signature

ApproveIt Signature Verification

Details of Dawn's Certificate

Individual X.509 v3 identification certificate information from the embedded audit trail of the signed PDF (common format).

Each identification certificate generated by the ePersona creation process is unique.

ApproveIt Signature Verification

ApproveIt - Audit Trail

Document has not been modified.

	Date & Time	Signed by	User Name	Revalidated by
✓	Sunday, February 1, ...	Dawn Smith	Dawn Smith	

Name of user profile signed on to system

Tabs: Replaced Fields | Advanced | On Page | Doc Info | Signing Information | Authentication

Serial number: tdc428-000000

Signature input: ePersona File

Serial number of ApproveIt® plug-in installed on system used to e-Sign

Method used to e-Sign

Close

ApproveIt Signature Verification
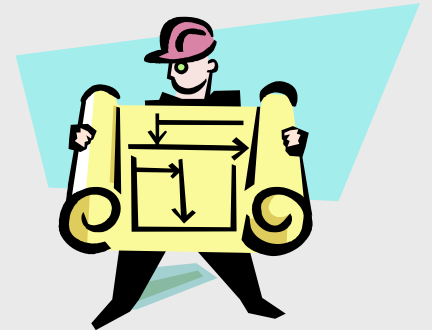
DOTD Digital Signature Solution

❖ Silanis Digital Signature Selection Factors

- ➢ Common format Digital Certificates

- ➢ Seems to cover all of the bases

- ➢ ePersona as Trusted Authority option

- ➢ Meets the Board's requirements

- ➢ High-profile clients: Department of Defense, etc.

- ➢ IT Section already implemented solution for Driveway Permits and cleared with Office of Information Technology.

DOTD Digital Signature Solution

❖ Digital Signature Implementation Issues

- ➢ Upper Management Buy-In

- ➢ State Law

- ➢ Technology Selection

- ➢ State Office of Information Technology

- ➢ Board of Professional Engieers approval

- ➢ Consultant buy-In

- ➢ Integrating with Plans Management System (ProjectWise)

"Digital Publishing"
(The Ultimate Goal)

Old Reality

New Reality

Electronic Publishing-
A Driving Force

DOTD Internal Plan Delivery System

CAD Plans Folder

BENTLEY "Publish to PDF"
(Uses InterPlot)

Form *
Status: (Full or Letter)

Pick Plan Status *
(Final Plans, etc.)

Publish Submittal

PDF Drawing PWise Index

PDF Submittal Folder
("Final Plans")

CAD Plans Folder

ProjectWise Plan Development System

PDF Submittal Folder

PDF Drawing XML Index
"Watched Folder"

Falcon SVP Electronic Plans Distribution Center

Sign PDF Drawing with ApproveIt

DGN - Bentley MicroStation CAD file format

PDF - Adobe file format used for published documents

XML - File format used to store attribute values (indexing)

ProjectWise - Bentley Plan Development System

Falcon - tsaADVET Electronic Plans Distribution System

Watched Folder - Monitored by Falcon for incoming plans

Publish to PDF Input/Output
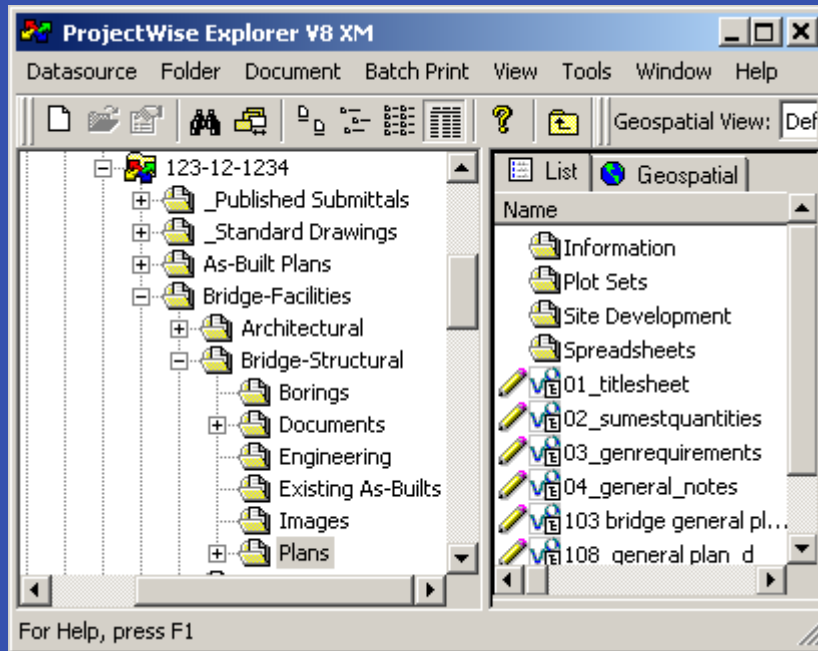
Input DGN
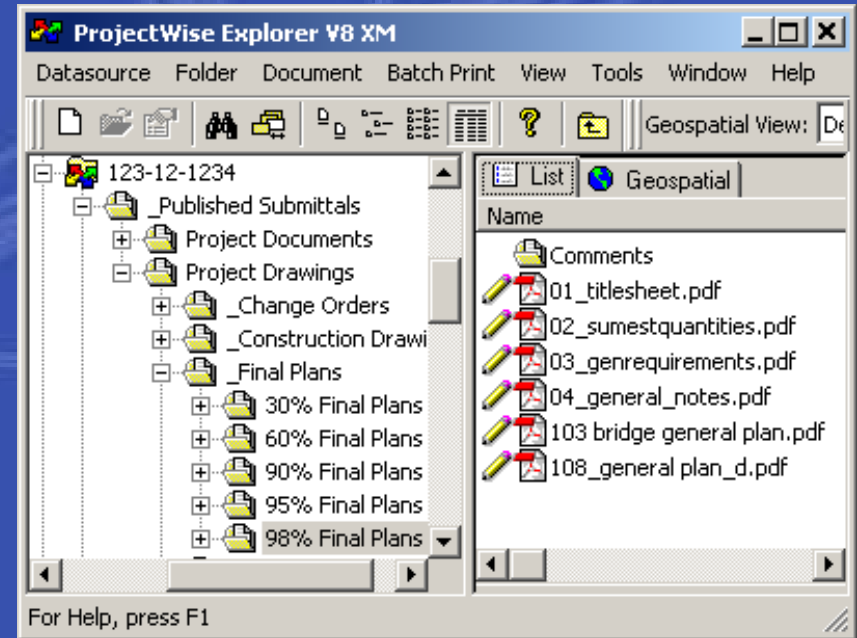
Output PDF
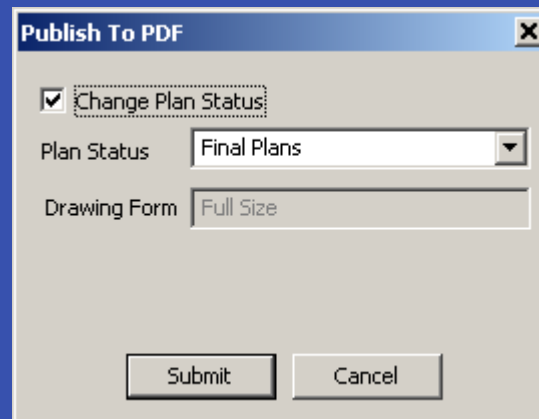
Digital Signature Signing Ceremony

❖ Bentley *Export / Import Signed Document*

- ✓ Exports drawings to C:\PW_SignatureDir
- ✓ Leverages standard ProjectWise Export command
- ✓ Engineer signs drawings using Silanis ApproveIt
- ✓ "Import" checks to make sure drawings are signed
- ✓ Imports drawings & executes "Set Final Status"
- ✓ Sets Signature Status attribute to "Signed"
- ✓ Records audit trail of signing ceremony

Bentley ProjectWise Custom PDF Publishing Extension
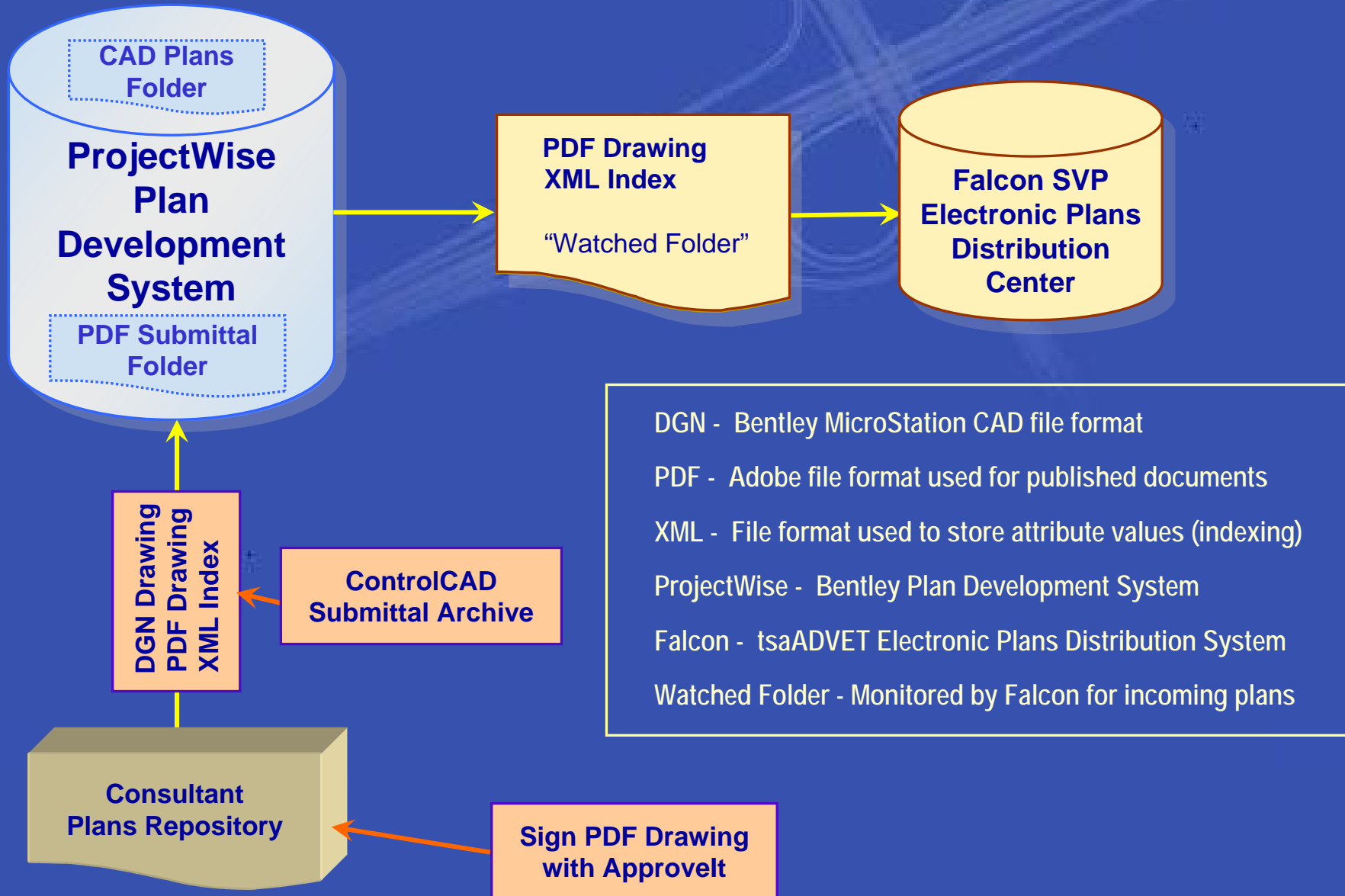
❖ Technology Makes Publishing Efficient

➢ "Publish To PDF" = Easy PDF Creation

➢ Copies attribute values from DGN to PDF

➢ Manages PDF Digital Signing Ceremony

➢ Exports PDF and index to Falcon "Plan Room"

Consultant Plan Delivery to DOTD System

CAD Plans Folder

ProjectWise Plan Development System

PDF Submittal Folder

PDF Drawing XML Index — "Watched Folder"

Falcon SVP Electronic Plans Distribution Center

DGN Drawing PDF Drawing XML Index

ControlCAD Submittal Archive

Consultant Plans Repository

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